

Claims

1. A valve for controlling fluid flow comprising a valve body having an inlet and outlet
5 port for fluid flow from a fluid pressure source, a valve seal mounted between the inlet
and outlet ports, the valve seal having a valve closure member constrained to engage
a valve seat in the closed position of the valve, a control port in the valve body for
providing a control fluid acting to maintain the valve closure member in the closed
10 position under a pressure differential as between that applied to one side of the
closure member by said fluid flow through the inlet port acting to lift the closure
member off the valve seat, and that applied on the other side of the closure member
through said control port to close the valve, and control means for varying said
differential pressure to control movements of the valve closure member and regulate
fluid flow through the valve.
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2. A valve as claimed in claim 1 wherein said valve seal is formed between the inner wall
of a flexible conduit acting as said valve closure member for fluid flow between the
inlet and outlet ports, and a valve seat mounted within the conduit to engage said
inner wall of the flexible conduit in the closed position of the valve.
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3. A valve as claimed in claim 2 wherein the conduit is circular in cross section and the
valve seat in the form of a sphere of larger cross section.
4. A valve as claimed in claim 1 wherein the valve seal is formed between the outer wall
25 of a flexible conduit for fluid flow between the inlet and outlet ports and an abutting
protuberance in a passageway for fluid flow in the valve body between the inlet and
outlet ports.

5. A valve as claimed in claim 1 or 2 wherein the conduit is surrounded by an annular space in communication with the control port to provide a pressure differential across the walls of the conduit as between fluid flow in the conduit and fluid supplied to the annular space.
6. A valve as claimed in claim 5 wherein fluid flow to the valve is fed to the inlet and control ports of the valve so that equal pressure is applied to either side of the valve closure member to close the valve, said control means including a restrictor valve in the flow of fluid to the control port to supply a sufficient amount of fluid adequately to pressurise the annular space in a predetermined time, and a normally closed switch actuable to vent the annular space and reduce pressure in the annular space whereby to open the valve.
7. A valve as claimed in claim 6 including a fluid reservoir in communication with the control port to supplement the pressure in the annular space, said switch being actuable periodically to vent and re-pressurise the reservoir and annular space through the control port to open and close the valve and generate fluid flow from the outlet port as a pulsed flow.
8. A valve as claimed in claim 5 including a feedback valve between the control port and the outlet port for varying the pressure of fluid at the control port in response to an imbalance in pressure at the outlet port thereby to stabilise the pressure or fluid flow at the outlet port.

9. A valve as claimed in claim 8 acting as a primary valve with the feedback valve being a secondary valve in accordance with claim 1 with its control port being responsive to pressure variations at the outlet port of the primary valve, the inlet port of the secondary valve being connected to the control port of the primary valve and the outlet port of the secondary valve vented to atmosphere.